

IN THE CLAIMS

1-51. (cancelled)

52. (currently amended) A wiring circuit panel, comprising:

a first metal layer having a first major surface extending in lateral directions, said first metal layer including a wiring circuit pattern;

a plurality of discrete solid metal bumps overlying a said major surface of said first metal layer;

an insulating film overlying said major surface of said first metal layer, wherein tops of said plurality of metal bumps extend upward through openings in said insulating film, said tops being surrounded in said lateral directions by said insulating film; and

a plurality of solder balls ~~overlying~~ disposed on said tops of said plurality of metal bumps, said solder balls being in conductive communication with said metal bumps.

53. (previously presented) The wiring circuit panel as claimed in claim 52, wherein said first metal layer and said plurality of bumps consist essentially of copper.

54. (previously presented) The wiring circuit panel as claimed in claim 52, wherein at least a portion of said insulating film is flexible.

55. (previously presented) The wiring circuit panel as claimed in claim 52, wherein said tops of each of said plurality of metal bumps include an upwardly facing concave surface and said plurality of solder balls contact said concave surfaces of said plurality of metal bumps.

56. (currently amended) A circuit module, comprising:
a flexible circuit panel including

a first metal layer including a wiring circuit pattern having a first major surface extending in lateral directions;

a plurality of discrete solid metal bumps overlying said major surface of said wiring circuit pattern;

a substantially flexible insulating film overlying said major surface of said wiring circuit pattern, wherein tops of said plurality of metal bumps extend upward through openings in said insulating film, said tops being surrounded in said lateral directions by said insulating film; and

a plurality of solder balls ~~overlying~~ disposed on said tops of said plurality of metal bumps, said solder balls being in conductive communication with said plurality of metal bumps; and

a second circuit panel having a substantially rigid dielectric element and a second wiring circuit pattern overlying at least a portion of said dielectric element,

wherein said second circuit panel is joined to said flexible circuit panel such that said second wiring circuit pattern conductively communicates with said flexible wiring circuit pattern through said plurality of metal bumps.

57. (previously presented) The wiring circuit panel as claimed in claim 52, further comprising a second metal layer overlying said surface of said first metal layer, said plurality of metal bumps overlying said second metal layer, wherein said second metal layer is an etch stop layer which substantially resists an etchant which would attack a first metal included in said first metal layer.

58. (previously presented) The wiring circuit panel as claimed in claim 57, wherein said plurality of metal bumps are formed by etching a third metal layer overlying said second metal layer.

59. (previously presented) The wiring circuit panel as claimed in claim 58, wherein said plurality of metal bumps and said first metal layer each consist essentially of a first metal.